



# MANAGING LOGGING SLASH PILES IN WESTERN OREGON

## MANAGEMENT PRACTICES TO AID IN THE SAFE DISPOSAL OF WOODY MATERIAL

Commercial logging generates woody debris — commonly known as “slash” — in the form of tree tops, limbs and broken pieces. Left in the forest, this debris provides nutrients for the soil as well as wildlife habitat. However, large quantities of slash can be a physical barrier to tree planting, be unsightly and pose a fire hazard.

This publication outlines best management practices for burning material not left for nutrients, firewood or

wildlife purposes. It aims to reduce fire hazards on the landscape and help landowners safely create and burn slash piles.

These practices and methods focus on the Douglas-fir and spruce and hemlock forests that grow in western Oregon, where dry summers are followed by fall rainstorms and east-wind events. While the practices outlined here may be applicable more broadly, this publication focuses on the forests of western Oregon.



## Pre-harvest considerations

Successful pile burning and slash management starts prior to harvest, with a conversation between the logger and the landowner. Shared expectations captured in the written contract ensure all parties understand who will manage slash during and after harvest, and how.

- sensitive resources such as streams, wetlands, trees left after logging and utilities
- animal populations, goals for wildlife and implications for reforestation

A notification of operations must be submitted to the Oregon Department of

Forestry (ODF) at least 15 days before any work begins. ([oregon.gov/odf/working/pages/enotification.aspx](https://oregon.gov/odf/working/pages/enotification.aspx)). ODF stewardship foresters are available for technical assistance, and can be helpful when communicated with in advance of harvest and pile burning. ([oregon.gov/odf/working/Pages/findaforester.aspx](https://oregon.gov/odf/working/Pages/findaforester.aspx))

**Consider these options for managing slash and include them in the harvesting contract with the operator:**

- pile to prepare for burning to remove the fire hazard or prepare for reforestation
- pile for wildlife
- set aside for firewood
- scatter in the harvest unit for nutrient cycling

**These factors will impact the amount and distribution of slash, whether it can be burned efficiently and landowner objectives for actions:**

- governing jurisdiction and whether slash burning is permitted ([oregon.gov/odf/fire/pages/burn.aspx](https://oregon.gov/odf/fire/pages/burn.aspx))
- stand conditions and resulting slash
- logging method(s) and equipment available
- utilization standards, including treatment of pulp material
- proximity and sensitivity of neighbors

### USE SLASH TO HELP WILDLIFE

Leaving a few unburned slash piles will provide excellent wildlife habitat. Another way to use slash to help wildlife is to construct habitat piles, or “biodens,” with stumps and larger pieces of wood. Consider placing these piles in lower elevations of the unit or near riparian areas and avoid areas with public access to prevent the piles being used as target-shooting backstops. These structures can play an important role for wildlife, similar to that played by large-diameter logs.



# Building slash piles for burning

## DURING HARVEST

Work with the logger as the operation progresses to administer the contract, including:

- removing all material as required, including pulp
- minimizing breakage during operation
- following piling requirements

## GENERAL GUIDELINES FOR LOCATING SLASH PILES

- Locate piles on mineral soil or slash-covered mineral soil. Avoid old stumps, rootwads or logs, as they may burn for a long time and create long-duration smoldering and smoke.
- Avoid draws, depressions and riparian areas where micro-site weather can be cool and damp.
- Avoid building piles on the edges of steep slopes.
- Avoid making piles inside of tree drip lines.

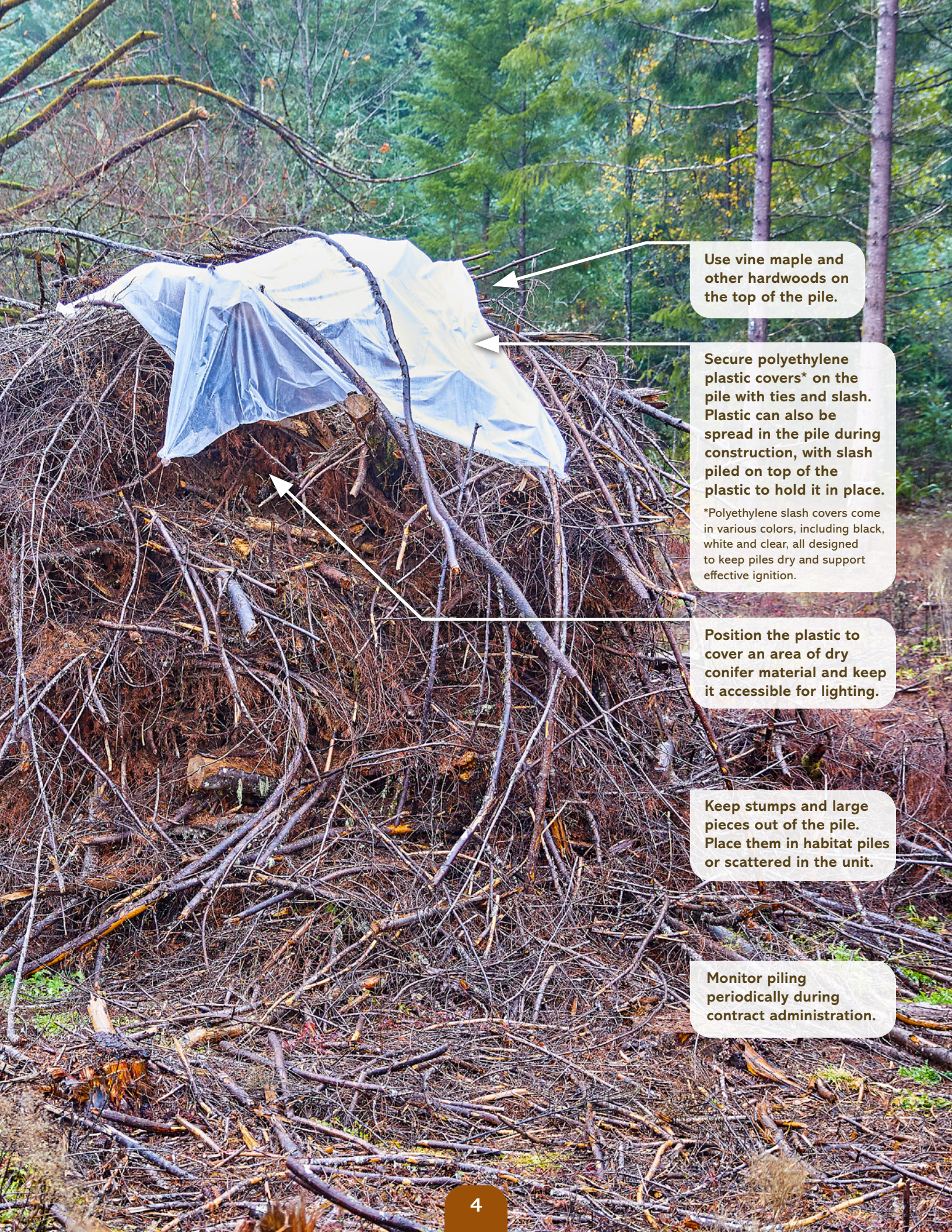


## RESOURCE PROTECTION

Ensure piles are a safe distance from sensitive resources. Consider the following before determining where to build slash piles for burning:

- |  |                                      |
|--|--------------------------------------|
| • neighbors  | • streams, draws and wetlands        |
| • structures   | • powerlines and other utilities     |
| • adjacent trees along property lines, or wildlife trees within the harvest unit | • road access                        |
|  | • other resources you plan to retain |

Safe distance depends on the sensitivity of the resource, weather, slope, pile size and more. Get advice from local resource professionals if you're unfamiliar with the burning environment.



Use vine maple and other hardwoods on the top of the pile.

Secure polyethylene plastic covers\* on the pile with ties and slash. Plastic can also be spread in the pile during construction, with slash piled on top of the plastic to hold it in place.

\*Polyethylene slash covers come in various colors, including black, white and clear, all designed to keep piles dry and support effective ignition.

Position the plastic to cover an area of dry conifer material and keep it accessible for lighting.

Keep stumps and large pieces out of the pile. Place them in habitat piles or scattered in the unit.

Monitor piling periodically during contract administration.

## ITEMS TO LEAVE OUT

- Place stumps in wildlife piles or scattered across the unit as they take a long time to burn, and can support fire spread if the weather turns dry and windy.
- Large pieces of wood take longer to burn than most slash material. Use pieces larger than 8 inches in diameter for wildlife habitat or firewood.
- Minimize dirt in piles to improve the combustion process. Slash mixed with non-combustible material increases emissions and long-term smoldering.

Photo: B. Glendenning



## TIPS FOR BETTER BURNING

- During pile construction, be sure the pile includes some good burnable material (e.g., conifer branches) and maintain access to that material for lighting.
- Place vine maple and hardwood slash on top of the pile, if possible.
- Create a ring of mineral soil that is relatively free of woody material around the pile to prevent fire spread from the pile to the surrounding area.
- Keep in mind that seasoned piles burn cleaner and faster than freshly piled green wood.
- When possible, align woody material in the same direction and keep it equal in length, to maximize airflow.

## TIPS FOR USING PLASTIC TO FACILITATE BURNING

- Cover piles with plastic to prolong the burn window, facilitate burning in a wider range of weather conditions, and to reduce emissions.

- Build a pile 6 to 8 feet high, beginning with good burnable materials such as conifer limbs and chunks.
- Cover the section with polyethylene plastic so that it is protected from rain and sheltered from prevailing west and

southwest winds. Standard practice ranges from covering at least a 10 foot by 10 foot section to nearly covering the pile completely.

- Finish constructing the pile, maintaining access to the covered portion.



# Equipment selection

The following list includes common equipment selected to construct slash piles during harvest operations (excluding hand piling techniques):

EQUIPMENT	ADVANTAGES	DISADVANTAGES
LOG LOADER	<ul style="list-style-type: none"><li>readily available, timely</li><li>work can be done while logging</li></ul>	<ul style="list-style-type: none"><li>presents a challenge when picking up smaller pieces like bark and debris compacted into landings or skid trails</li></ul>
EXCAVATOR with brush rake attachments	<ul style="list-style-type: none"><li>piles material to make a clean area with minimum compaction</li><li>mitigates issues such as ripping skid trails and landing areas, and removing hardwoods and undesirable vegetation</li><li>can pull slash and debris back from unit edges/property lines, sensitive areas, and around piles prior to burning</li></ul>	<ul style="list-style-type: none"><li>more expensive if only used for slash management</li></ul>
DOZER	<ul style="list-style-type: none"><li>fast, efficient</li><li>should be outfitted with a brush blade to minimize soil movement</li></ul>	<ul style="list-style-type: none"><li>piles are not as tall and may be more difficult to burn</li><li>usually introduces too much soil in piles</li><li>more likely to compact soil</li></ul>



The following list includes common equipment selected to light slash piles:

EQUIPMENT	ADVANTAGES	DISADVANTAGES
FIREWOOD, NEWSPAPER, FIRE-STARTER LOG	<ul style="list-style-type: none"><li>readily available, inexpensive</li></ul>	<ul style="list-style-type: none"><li>slow and difficult to access dry portion of pile for lighting (leaf blower can accelerate pile ignition)</li></ul>
DRIP TORCH	<ul style="list-style-type: none"><li>designed for lighting forest slash</li></ul>	<ul style="list-style-type: none"><li>difficult when piles are wet</li></ul>
PROPANE TORCH (weed burner)	<ul style="list-style-type: none"><li>readily available, inexpensive</li></ul>	<ul style="list-style-type: none"><li>difficult to access dry portions of piles</li></ul>
PANAMA TORCH	<ul style="list-style-type: none"><li>designed for lighting slash</li></ul>	<ul style="list-style-type: none"><li>slow work when piles are wet</li><li>more expensive than other methods</li></ul>



# Preparing for and executing a slash burn

## WEEKS BEFORE BURNING

1. Review the information on burn registration, fees and process in the “Forestland Burning Guide” on ODF’s webpage ([oregon.gov/odf/fire/pages/burn.aspx](http://oregon.gov/odf/fire/pages/burn.aspx)).
2. Estimate the tons of material to burn. The preferred method is ODF’s online Piled Fuels Biomass and Emissions Calculator, located in the Fuel Load Estimating Tools. ([weather.smkmgmt.com/tools/fuel\\_loading/fuel\\_loading\\_tool\\_home.html](http://weather.smkmgmt.com/tools/fuel_loading/fuel_loading_tool_home.html)).
3. Fill out a smoke registration form and a burn plan (located at the website above), and turn them in to your local ODF office, if the land is inside a protection district, or contact your local fire department.
4. Start monitoring the weather.

## DAY BEFORE BURNING

Choose a day with ideal weather. Call your local ODF office or fire department to see if your burn can be scheduled within Oregon’s Smoke Management Plan and not impair air quality. Your local office will issue a burn permit, if necessary. Talk to your neighbors so they aren’t surprised and can be prepared.

Ideal weather is a point in the fall or winter when three things are true: surrounding exposed fuels are damp enough to prevent fire spread, the pile remains dry enough for rapid consumption, and the 10-day weather forecast calls for wet or damp conditions.

Delay burning when surrounding fuels are dry enough to carry fire, or dry and windy conditions (any east winds) are forecast, and wait until a better weather window arrives.

## LIGHTING

Using the instructions found in your burn plan and burn permit, light the piles.

## SAFETY

Use of fire and fire starters carries inherent risks. Follow the instructions on lighting products and wear your personal protective equipment.

## Monitoring and liability

### You are responsible for the fire you light!

Piles will burn for a week or more when properly constructed — weeks or months if the pile includes stumps, dirt and large woody material. Monitor fires regularly until completely extinguished.

East winds often cause piles to rekindle and spark to surrounding material. If dry, windy conditions appear in the forecast, consider fully extinguishing the pile before the dry, windy weather arrives. It may take equipment to spread the hot material out into a thin blanket that can be extinguished with water and shovels.

Should dry, windy weather arrive while your piles are still hot, monitor them carefully for heat buildup and spark generation. If this happens, work to contain the sparks using water and soil, and call for help (911), if needed.

Landowners and/or operators assume liability for damage to the property of others caused by an escaped pile burn, and may be liable for fire suppression expenses depending on the circumstances. See Oregon Law Chapter 477 for more on liability.

For assistance managing burn operations, consider the Certified Burn Manager program offered through ODF. ([oregon.gov/odf/fire/pages/prescribed-fire.aspx](http://oregon.gov/odf/fire/pages/prescribed-fire.aspx)).



# Checklist for pile burning

## PRE-HARVEST

- ☐ Determine if burning is an option
- ☐ Identify sensitive resources
- ☐ Work with operator to agree on post-harvest conditions
- ☐ Finalize contract language and sign the contract
- ☐ File Notification of Operation with ODF

## DURING HARVEST

- ☐ Administer contract terms

## WEEKS BEFORE BURNING

- ☐ Estimate tons of material to be burned ([weather.smkmgmt.com/tools/fuel\\_loading/fuel\\_loading\\_tool\\_home.html](http://weather.smkmgmt.com/tools/fuel_loading/fuel_loading_tool_home.html))
- ☐ Fill out and submit a smoke management registration form, available on ODF's website ([oregon.gov/odf/fire/pages/burn.aspx](http://oregon.gov/odf/fire/pages/burn.aspx)) and burn plan at least seven days prior to ignition
- ☐ Start monitoring weather and subscribe to ODF's Smoke Management Instructions - West for western Oregon ([weather.smkmgmt.com/mailman/listinfo/smi\\_west\\_weather.smkmgmt.com](http://weather.smkmgmt.com/mailman/listinfo/smi_west_weather.smkmgmt.com))

## DAYS BEFORE BURNING

- ☐ Consult with ODF or your local fire department to determine the best days to burn
- ☐ Watch the weather forecast, and if additional weather information is needed, contact the National Weather Service for a spot forecast ([spot.weather.gov/new-request](http://spot.weather.gov/new-request))
- ☐ Obtain burn permit or burn permission

## DAY OF THE BURN

- ☐ Follow instructions found in the burn plan and burn permit
- ☐ Monitor burning



## DAYS FOLLOWING THE BURN

- ☐ Monitor burn regularly
- ☐ Watch the long-term weather forecast for wind events that could cause smoke impacts to a community or rekindle the burn pile
- ☐ Extinguish the pile as necessary to prevent the spread of flames
- ☐ Report burning accomplishments daily to your local ODF office or the office that issued your burn permit

**Piles constructed using the guidelines in this publication will often burn for a week or more. Piles constructed with large material, stumps and dirt can burn for months. Piles lit in October have caused wildfires the following summer. Always monitor piles to avoid unintended consequences and smoke impacts.**

For the best management practices for slash piles in eastern Oregon, refer to Chapter 11 of the Oregon State University Extension Service publication *Ecology and Management of Eastern Oregon Forests* ([extension.oregonstate.edu/sites/extd8/files/documents/manual12.pdf](http://extension.oregonstate.edu/sites/extd8/files/documents/manual12.pdf)).

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